

## **Renewables**

### **Wind**

#### **New York State Tug Hill Commission**

The Public Service Commission order regarding the merger of Niagara Mohawk and National Grid sets the stage for a possible additional power line to the Tug Hill Region to handle potential wind energy development. There is considerable local interest in the proposal proceeding. To assist in this matter, the Tug Hill Commission is ready to work with NYSERDA and others in further assessment of the wind energy development potential of the Tug Hill region.

**Response:** The State Energy Plan includes numerous recommendations for promoting and supporting renewable resources and technologies and wind generation, in particular. NYSERDA has made a major commitment to wind generation and welcomes opportunities to work with public and private partners.

#### **New York State Tug Hill Commission**

The provision to allow local taxing jurisdictions to opt out of the wind and solar property tax exemption of section 487 of the State's Real Property Tax Law and the provision for local taxing jurisdictions to opt out of the exemption provide two policy extremes for wind energy development *i.e.*, either provide for total exemption or tax fully. Payments in lieu of taxes (PILOTs) provide a middle ground that is economically feasible for the sorts of wind projects recently built in the State and those now being proposed for Tug Hill. Section 487 does not provide clear authorization for PILOTs, and such authorization might facilitate wind energy development, especially in multiple taxing jurisdiction situations. The State Energy Plan might incorporate such a recommendation.

**Response:** Changes in tax law are under the purview of the State Legislature. Research is being conducted by the New York State Department of Tax and Finance into the feasibility of providing a tax credit for investment in renewable electric generation capacity.

#### **Jennifer Bostaph**

More information is needed on the Madison County Wind Farm in the Draft State Energy Plan. (See page 2-166.) There should be information on how the public reacted to having a wind farm built in their community, where in the community it was built, and

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how much energy is given off. Making more information available would help increase the growth of wind farms across the State.

Response: Information on the Madison County Wind Farm is available at NYSERDA's web site ([www.nyserda.org](http://www.nyserda.org)) and at Wind Power New York ([www.awea.org/WPNY](http://www.awea.org/WPNY)). The references are included in the State Energy Plan.

#### Lake Shore Environmental Action of Wolcott

Wind power should receive at least the level of tax subsidy as photovoltaics in New York.

Response: Tax subsidies or tax credits require legislative action. Consideration is being given by the New York State Department of Tax and Finance with respect to the feasibility of providing a tax credit for investment in renewable electric generation capacity.

#### Green Party

With respect to wind power, the draft State Energy Plan, on page 3-42, notes that bird collisions are one of five potential impacts of windmills. This statement about windmills is obsolete. All new wind farms are more carefully sited to significantly mitigate any effects on local bird populations.

Response: The comment is correct that, when new generation technologies are used, bird collisions are no longer barriers to siting of wind power. The State Energy Plan reflects this understanding. See Section 3.3, Renewable Energy Assessment.

#### American Wind Energy Association (AWEA)

We should set a State goal of 1,000 megawatts of wind by 2010. It is not a sustainable policy for us to adopt a plan when it calls for a 72 percent increase in natural gas usage, a 24 percent increase in coal usage, and a 21 percent increase in gasoline. Let's not adopt those.

Response: Rather than single out specific renewable energy resources, the State Energy Plan makes numerous recommendations to increase the availability of renewable-generated energy, including wind. The Planning Board expects the State's share of renewable energy, as a percentage of primary energy use, to increase from ten percent in 2000 to 15 percent by 2020. In addition, recommendations that New York Power Authority and Long Island Power Authority competitively solicit electric capacity from

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renewable energy resources specifically mention wind generation. See Section 3 of the State Energy Plan.

#### American Wind Energy Association (AWEA)

At the federal level, New York should be on the record supporting an extension of the production tax credit for large-scale wind development and, in changes to the Federal Clean Air Act, should support an allocation of emission credits under the cap-and-trade program for renewables.

Response: The State and other partners have supported both a production tax credit for large-scale wind development and changes to the Federal Clean Air Act that would allocate emissions credits under a cap-and-trade program for renewables.

#### Offshore Wind

##### Star Foundation

Our organization has been going around doing some missionary work [on offshore wind projects]. There's overwhelming support for this energy generation down here, and, hopefully, the State will provide some guidance, leadership, and money for it. There's going to be a little bit of a regulatory quagmire with the various regulatory agencies. We hope the Draft State Energy Plan could address that and also do things to facilitate [offshore wind].

Response: The potential for off-shore wind is addressed in the *Efficiency and Renewable Energy Potential Assessment* referred to in Section 3.3, Renewable Energy Assessment, of the State Energy Plan. NYSERDA is actively promoting wind energy development in New York by providing support to developers interested in finding possible wind sites. Technical and financial assistance are available.

##### Bald Eagle Power Company

In this entire 350 page document [the draft State Energy Plan], there is only one mention of offshore wind energy, and that is in a footnote on page 3-61. Bald Eagle recommends the following:

- End users who buy green power should receive a New York State tax credit of 1.5 to 2 cents per kilowatt hours for a period of ten years. The average customer who is not investing in expensive photovoltaics or fuel-cell equipment should be able to benefit by simply being a purchaser of green power.

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The State Energy Plan should mandate that LIPA spend a meaningful percentage of its R & D funds for major offshore wind energy development, in proportion to what they have spent on other renewable technologies.

The public has little understanding of renewable energy. We would like to see the inclusion of a more aggressive public education program regarding renewables and in particular the potential of offshore wind power.

Response: Wind energy, whether developed on land or off shore, is important to the State and is being supported. Many strategies for increasing the supply of and demand for renewable energy are represented in the State Energy Plan. NYSERDA has targeted more than \$91 million for renewable energy resources and technologies through the system benefits charge program. More than half of that sum will be used for development of various types of wind energy technologies. With respect to public education, NYSERDA has recently introduced a \$1.5 million program to assist the renewable industry with marketing and education about renewable energy. The program will develop a web site, offer technical seminars and consumer education publications, fund research papers addressing specific renewable energy issues, and conduct general outreach and awareness forums.

Wind energy producers currently receive a federal production tax credit and beginning in 2003, wind energy producers will be eligible for the NOX set aside program. Through this program, each 1.33 gigawatt hours of electricity produced will be certifiable as a one-ton NOX allowance that may be sold on the open market at the prevailing market price. New York State is unlikely to offer a tax credit to purchasers of green power. However, in the near future electricity customers will be informed about the environmental attributes of the power being supplied to them. The information will appear on utility bills and compares nitrogen oxides (NOX), sulfur dioxide (SO<sub>2</sub>), and carbon dioxide (CO<sub>2</sub>) emissions from generation of the power sold by the customer's supplier with the statewide average. The information will stimulate suppliers to add green power to their mix.

## **Hydropower**

### **The University at Binghamton**

Hydroelectric and biomass and coal co-fired projects that are put into operation after December 31, 2001 should be included as part of the ten percent green energy required by Executive Order 111.

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Diane A. Davis

The Plan is way too myopic and irresponsible in its lack of direction for hydropower.

The University at Binghamton

The State Energy Plan should rethink disallowing hydropower from consideration as a new source of green power, also coal, renewables, wood, and wood paper products.

David Bradbury

The State should encourage development of clean hydropower.

Ashok K. Trikha

It is suggested that a second look at the costs and benefits of hydropower be included in the State Energy Plan.

Response: The Energy Planning Board supports development of all energy resources that are cost effective and meet applicable environmental and other requirements. The Board supports use of indigenous resources, in particular. To the extent that water resources are available, the development of clean hydropower is certainly included as one of the resources that should be considered. The results of the technical assessment portion of NYSERDA's *Efficiency and Renewable Energy Potential Assessment* study are incorporated in the State Energy Plan.

Tidal (Estuary) Power

New York State Sustainable Energy Coalition (NYS-SEC) *et al.*

New York State has one of the largest estuaries in the continental United States. The Hudson River estuary has tidal flows daily upriver to the Troy dam above Albany, New York. The Hells Gate area of the Hudson Bay has the strongest tidal flows in the entire estuary and actually creates a vortex. Yet, there is absolutely no mention in the State Energy Plan of researching tidal flow power generation in the Hudson River estuary.

This method of producing power would produce completely pollution free power with no fuel consumption or costs. The only costs to produce power in this manner are the original capital costs and infrastructure maintenance.

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Power generation platforms could be located offshore using vast space for combined solar, wind, and tidal flow power generation.

Response: Tidal power is a viable renewable energy resource that at this point in time has numerous problems associated with its use. For example, tidal power suffers from problems matching the supply and demand for the electricity. Depending on the climate, electricity demands peak at particular times throughout the day, often in the morning and in the evening. Because the tides are sinusoidal, matching the possible power output with the times of peak demand is difficult. As a result, tidal power plants usually require a backup system to meet the demand when the tidal plant cannot. These backup plants often operate on fuel oil or natural gas. When the cost of the tidal plant and the backup plant are combined, the option of tidal power becomes quite expensive.

One of the major problems facing the construction of tidal power plants, or barrages, is finance. Once built, a barrage will generally take several decades to repay the investment costs. With conventional power plants, construction is expensive but a significant portion of the overall cost is the cost of fuel, which cost is incurred after the plant has been built. Consequently, some of the cost is deferred until after the plant has started providing income. With renewable power plants, such as tidal plants, nearly all the costs are capital costs. It is often harder to find investment sources when the cost must be covered entirely up front, before any income is returned.

The construction of a large barrage across an estuary would clearly have an effect on the local ecosystem. The most obvious potential impact would be the wildlife, such as the fish and birds. The turbine blades would kill fish if they swam through the water passages of the barrage. Also, estuaries often play host to migratory birds who feed on worms and other invertebrates that are on the exposed mud flats. On the other hand, tidal power plants have a positive effect by reducing the possibility of flooding.

Tidal power stations are already being used in Canada, France, Russia, and China. The largest, on the Rance River in France, generates 320 megawatts of electricity.

## **Solar, Photovoltaics**

### **Power Light Corporation**

Power Light feels there are things that need to be in place for more widespread deployment of photovoltaic (PV) technologies in New York.

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With respect to buy-down money, in order to encourage the private sector to invest in PV, buy down money – money to buy down the initial cost of the system – is the most effective way of getting the private sector involved. NYSERDA has money available, but it is not across the board. We believe a small amount of money, for example, \$30 million for the next five years, be set aside so there is a buy down available at all times. This would encourage about ten megawatts of PV installations per year.

Response: Financial incentives for commercial photovoltaic (PV) systems are available through several NYSERDA programs including PV on Buildings (\$1 million a year budget), the New Construction Program (\$3 million a year reserved for PV), and the **New York Energy Smart<sup>SM</sup>** Loan Fund. NYSERDA's programs are designed to develop the infrastructure necessary for PV and other renewable energy technologies to be deployed effectively and not to provide directed investment in projects. At an installed cost of \$10,000 per kilowatt, a direct investment of \$30 million in PV generation would procure merely three megawatts of installed photovoltaic capacity. \$30 million will provide substantial assistance in expanding the renewable energy resources industry through leveraging private investment and training. More information about NYSERDA's renewable programs is available from [www.nyserda.org](http://www.nyserda.org).

#### Power Light Corporation

With respect to State procurement of photovoltaic electric generation, direct State procurement over the next five years from the New York Power Authority (NYPA) and the Long Island Power Authority (LIPA) would provide a predictable and stable market for the industry. If we know that market was in place, industry would make investments in manufacturing and marketing in New York. But we need to have that predictability.

Response: The State Energy Plan contains recommendations that NYPA and LIPA competitively solicit bids for long-term contracts for the purchase of 100 megawatts each of renewable energy resources. See Section 1.3.

#### Green Party Binghamton

New York should lead the way and force the million solar roofs initiatives to speed up their projected time lines, developing jobs and businesses in New York to service solar powered customers and producers.

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Jennifer Bostaph

More information should be provided on the Million Solar Roofs Initiative discussed on pages 3-57 of the draft State Energy Plan. Where are the 10,000 roofs going to be installed? Can residential dwellings be part of this initiative?

Response: The Million Solar Roof Initiative is a federal program that promotes solar technologies for commercial and institutional applications. In New York State, Long Island Power Authority has committed to installing 10,000 solar roofs by 2010. As part of its participation in this program, LIPA is working to develop a certification process for PV installers. As part of its **New York Energy Smart<sup>SM</sup>** programs, NYSERDA developed the Residential PV Program and the **New York Energy Smart<sup>SM</sup>** Loan Fund . to provide incentives for the purchase of residential PV systems and to build the support infrastructure for the technology. Information on the Million Solar Roofs Initiative can be found at [www.eren.doe.gov/millionroofs/](http://www.eren.doe.gov/millionroofs/).

American Lung Association of Nassau-Suffolk

We support the development and deployment of wind and solar. The State should develop a plan to use these sources of energy as well as encouraging programs and policies to make it easier for residents to adopt renewable energy technologies. The State can encourage economic growth by providing funding for manufacturers to locate in New York State.

Response: Section 3.3, the Renewable Energy Assessment, of the State Energy Plan describes NYSERDA's Solar Electric and Wind Product Development Program, that is funded at approximately \$1 million per year and supports New York State manufacturers of renewable energy products with incentives and technical assistance. The State Energy Plan makes numerous recommendations that support renewable energy resources and technologies. See Section 1.3.

David Stout

When considering energy sources, the energy of the sun has to be recognized as the only long-term energy source. A supply assessment in your report needs to be created for that source. The actual use or primary energy source, the sun, and its effects using energy efficient devices must be advocated.

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### Pace University School of Law, Pace Energy Project

I would implore you to make the Draft State Energy Plan as customer friendly for solar as possible. We need more dealers, installers. We need to grow the infrastructure in the State. We need to get the word out. We need as much help as we can to make the interconnection process smoother.

Response: The use of solar energy – the sun – via photovoltaics technologies is discussed in the Renewable Energy Assessment, Section 3.3 of the State Energy Plan. The State Energy Plan fully endorses expansion of the State's solar industry through increased research and development and building the solar industry support infrastructure.

### Jennifer Bostaph

Passive solar energy is mentioned on pages 3-68. How much is passive solar energy used in NYS? What is the potential for this use? Information on this matter should be distributed to homeowners.

Response: The extent of passive solar energy use in New York State is unknown but there is anecdotal evidence that many passive homes exist, particularly in rural, off-grid settings. This relatively simple technology has broad applicability in residential settings but interested builders and homeowners face problems obtaining conventional financing.

The State Energy Plan calls upon the State to expand its efforts to improve the efficiency of energy generation and encourage use of indigenous and renewable energy resources. One recommendation addresses low-cost, passive building efficiency measures, including passive solar design.

### Interconnection Standards

#### New York Public Interest Research Group

The interconnection and exit fees are exorbitant and need to be eliminated or completely restructured.

#### Power Light Corporation

With respect to interconnection standards, we need very simple, low, or no cost interconnection to the utility grid. It's a major obstacle. We've fought battles on literally every system we've put in.

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### Plug Power, Incorporated

In terms of things that can happen in the energy system, it's important that we look for ways to change the interconnection standards. The most efficient way to operate distributed generation is in parallel with the utility system. This raises a number of regulatory issues that can present barriers to entry for the distributed generation. New York State must eliminate these barriers or risk losing the environmental benefits associated with distributed generation and fuel cells.

Response: The Public Service Commission's (PSC) Standardized Interconnection Requirements for installations with a capacity of 300 kilowatts or less connected to radial distribution systems were finalized in 1999. The document provides for a standard application and contracts along with technical requirements for interconnection with utility systems. The PSC is now proposing several revisions to the standards to further simplify the process, in particular for small photovoltaic systems that are eligible for net metering.

Interconnections within network systems and for facilities greater than 300 kilowatts are more problematic. The PSC staff is monitoring efforts at the national level to standardize and streamline interconnection standards for units larger than 300 kilowatts. While the Energy Planning Board supports further efforts to simplify interconnections, care must be taken before allowing interconnections that compromise public and worker safety and system reliability.

### Net Metering

#### Alfred University

The barriers to installation and connection of residential renewable energy systems ideally should be seamless. Net metering, tax incentives, and rebates for residential photovoltaic systems are welcome, but none of these incentives can be implemented without a signed contract with the utility. I hope the State can reevaluate its net metering law and allow wind generation. (See Response on page 11-12.)

#### New York Public Interest Research Group

The net metering policy for solar energy should be extended to include wind. (See Response on page 11-12.)

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Harbec Plastics, Inc.

Depending on the size of the distributed generation plant, you need net metering. (See Response on page 11-12.)

Connie Fagnoli

We own a small wind turbine and we've been pushing for net metering for it. (See Response on page 11-12.)

Western New York Sustainable Energy Association

The first recommendation is to accelerate green power development by removing barriers to net metering. Net metering should be expanded to include wind and the ten kilowatt cap should be removed. (See Response on page 11-12.)

Power Light Corporation

Power Light is a leading developer of commercial PV systems in the U.S. Power Light feels there are things that need to be in place for more widespread deployment of PV in New York. (See Response on page 11-12.)

With respect to net metering, the current net metering bill has a cap of ten kilowatts. Ten kilowatts is tiny and, really, in the commercial world, is meaningless. If we want to reach our goals, we need to raise our cap. We suggest it should be raised to one megawatt standard, as was done in California. There is legislation on the federal level in place for one megawatt net metering. It costs the State nothing, it is just a regulatory change. (See Response on page 11-12.)

Green Party Binghamton

A barrier built into the draft State Energy Plan restricts the freedom of New York's electricity customers to participate in net metering programs. While New York is one of 35 states that require utilities to allow residents to participate in net metering programs, New York's net metering program established by the Solar Choice Act of 1997 is limited to 0.1 percent of the 1996 peak demand. In contrast, Vermont and Ohio have limits ten times greater and twenty states have no limits. New York needs to catch up with the states that do not inhibit the freedom of their citizens to make power.

The draft State Energy Plan states that the New York State Public Service Commissioner will review the current limitations on net metering in 2005. The Green Party urges that this review be moved to the present, near the fifth anniversary of the Solar Choice Act.

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New York's net metering program should be extended to wind energy. (See Response on page 11-12.)

### Renewable Energy Works

Removing barriers to net metering should be a major point of the State Energy Plan. Several flaws in the net metering law are responsible for the fact that very few systems have been deployed. The net metering program should be extended to clean, renewable wind power, and the cap of 0.1 percent of the utility's capacity should be eliminated. (See Response on page 11-12.)

### Hudson River Sloop Clearwater, Inc.

A more inclusive net metering law should be introduced. Connecticut allows both residential and commercial with no limit.

Response: Net metering was adopted by the New York State Legislature, and the ten kilowatts per unit and the overall capacity cap are set by Law. Any change, including inclusion of wind power, would require legislative action. It may be incorrect to say that increased net metering would cost the State nothing because the benefits that the net metering customers would receive could result in added costs for other ratepayers. The Legislature would need to consider whether it wishes to change the law to increase the overall capacity cap. The Governor currently has a program bill to expand net metering to digesters. In the State Energy Plan, the Energy Planning Board recommends expanding net metering.

### Hydrogen

#### Mike Mercincavage

There's been a lot of hype about a hydrogen-based economy. The hydrogen-based economy described in the State Energy Plan will rely on natural gas. All the natural gas reserves are owned by oil companies. It's a primary source of cheap heating and energy right now. If it were used for powering cars as well as for home heating, the supply and demand curves would show we're going to have a terrific increase in the cost of home heating. There are alternatives to natural gas for the production of hydrogen. We need a cheap way to provide the electricity to break down water. The State Energy Plan could set the direction to find a better way to create hydrogen, through the universities through the State.

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Response: While the goal is an important one, the level of funding necessary to reach technical success is beyond the scope of a single state. The U.S. DOE is devoting research funds in the development of biological and chemical methods to produce hydrogen.

At this point in time, electrolysis of water is an expensive way to make hydrogen. It is technically feasible, but uneconomical without low-cost electricity.

Koganeya Toshiyuki

There should be more emphasis on hydrogen-based energy systems (such as fuel cells) since hydrogen emits water, not carbon dioxide, when burnt.

Response: New York State has made a significant contribution to promotion of fuel cells through NYSERDA's partnership with pioneering Plug Power, LLC. From 1992 to 1997, NYSERDA invested over \$3 million in fuel cell research. In addition, NYSERDA has completed a \$6 million project jointly funded by the Clean Air/Clean Water Bond Act and Plug Power, LLC to manufacture, evaluate and field demonstrate 80 Plug Power fuel cell power systems at various State-owned facilities and locations. The final project report *Field Demonstration of Plug Power PEM Fuel Cell Systems* will be released to the public in June 2002.

**Fuel Cells**

Key Span

Key Span is the largest servicer of fuel cells in the country. We take issue with references in the study that fuel cell technology is not yet mature. The NASDAQ sign outside this building is operating on 200-kilowatt fuel cells installed and serviced by Key Span. We have two units that have been operating since 1996. They have gone over 40,000 hours now without incident. While we do think that there have been some challenges at different sizes, we don't want to lose the fact that we have had real success.

Response: Although fuel cells are technologically viable, their commercialization potential is currently limited by a number of barriers including their high initial cost. The Energy Planning Board looks forward to, and expects, fuel cells to be commercially viable in the near term. Fuel cells are discussed in detail in Section 3.3., Renewable Energy Assessment, of the State Energy Plan.

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### Plug Power, Incorporated

In the Draft State Energy Plan, you talk about solid oxide [fuel cells] as an investment. Plug Power believes that it is more important to invest in Proton Exchange Membrane technology.

Response: The Energy Planning Board in the State Energy Plan does not advocate for specific technologies. Therefore, the reference to the investment potential of solid oxide fuel cells was removed from the Energy Plan.

### MTI Micro Fuel Cells Inc.

MTI MFC is dedicated to rapid development and commercialization of direct methanol micro fuel cells. We are pleased to see fuel cells play such a visible role in the draft State Energy Plan. We would request that the focus of fuel used in fuel cells be expanded to more than just gaseous hydrogen and hydrogen rich reformat (see page 3-69 of the draft State Energy Plan). Although hydrogen has long been connected with fuel cells, it is erroneous to assume that hydrogen is the only viable fuel to be used. We respectfully request that direct methanol fuel cells be included in the listing of fuel cell technologies.

Response: Methanol is a viable alternative to natural gas for fuel cells and can be used in conventional fuel cells. However, since methanol currently costs more than natural gas, it is not an economic alternative to natural gas for use in fuel cells that can use either fuel. MTI and others are working on direct methanol fuel cells that could reduce the initial cost and make the product competitive despite the higher cost of the fuel. At the current time almost all work on direct methanol fuel cells is with fuel cells that are extremely small, *i.e.*, cell phone battery size.

### Biomass

#### Diane A. Davis

The State Energy Plan should encourage small business to collect grass and shrubbery cuttings as well as agricultural waste for the use as a steady supply of fuel in biomass cogeneration facilities to produce steam for electricity generation.

Response: NYSERDA's forthcoming *Efficiency and Renewable Energy Potential Assessment* regarding the potential contribution to New York State's energy mix of biomass co-fired with coal and of municipal solid waste-to-energy technologies will be

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finalized in the late summer of 2002. This study will address the economic potential for a number of renewable technologies, including bio-power.

The Energy Planning Board encourages all reasonable efforts to establish a biomass industry in New York State including innovative uses of agricultural and other waste products.

Jerry Michael

New York State has closed all but one of its wood pulp plants, and this is a mixed blessing. From an environmental standpoint, it's probably good news. From an economic standpoint, it's bad news. Is anybody examining the use of biomass for electric generation and to support another important industry – the timber industry -- in the State? Is anyone looking at the impact using biomass as a fuel for electric generation has on the environment?

Response: There are two wood burning power plants in the State and two utilities that are interested in co-firing wood with coal. These plants use clean waste wood products from timber stand improvement activities and the forest products industry. In addition, NYSERDA is working with companies to develop technologies to convert wood into high value fuels and chemicals.

The impact of biomass power on the environment has been explored from a number of different perspectives. The power plant must receive a permit from NYSDEC and thus meet all applicable air quality regulations. Because wood is a renewable resource, generating electric power from wood is considered to have no impact on greenhouse gas emissions. When a clean waste wood resource is used to generate power, the waste is put to an economic use as opposed to being placed in a landfill. With proper forest management, harvesting wood for energy can provide an outlet for low quality trees and provide an incentive for a landowner to take better care of the forest land as opposed to harvesting only the most valuable timber.

Landfill Gas and Methane

Robert Lambert

Methane production from farms and sewage treatment plants should be encouraged as part of the Draft State Energy Plan.

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Diane A. Davis

Do not develop methane from landfills as this will add hydrocarbons into the ambient atmosphere, create additional greenhouse gases and contribute to acid precipitation and global warming.

Response: NYSERDA currently supports methane production on farms and has worked to modify the net metering legislation to include farm-based electricity from methane and to reduce stand-by rates. NYSERDA is also in the process of assessing the potential for generating electricity from sewage treatment plants.

Jennifer Bostaph

The use of landfill gas is discussed in pages 3-66. How many landfills are in NYS? What is their energy potential?

Response: The number of sites and energy potential appears in Section 3.3 of the State Energy Plan. Analyses conducted since distribution of the draft State Energy Plan have identified 18 operational sites, two more than was indicated in the Draft State Energy Plan. A preliminary estimate of total landfill gas electricity generating capacity is 53 megawatts, changed from the figure of 46 megawatts that appeared in the Draft State Energy Plan.

Landfill gas-to-energy projects capture the methane that would otherwise be released into the atmosphere and use it to produce electricity. If not burned or used in some way, methane is a greenhouse gas that produces a negative impact on global warming 21 times greater than that produced by CO<sub>2</sub>.

### Waste-to-Energy

Integrated Waste Services Association (IWSA); Covanta Energy Corporation

Our concerns are that the Draft State Energy Plan does not include waste-to-energy as an eligible technology for any of the initiatives contained in the plan. [See comments for list of reasons why waste should be considered renewable.]

This March, in fact United States Environmental Protection Agency is due to release an emissions data base of actual emissions from every waste-to-energy plant in the country. We are the only industry to have this kind of data base, and they have told us that the data show that the control technology has exceeded the U.S. EPA's estimates for mercury and dioxin.

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### American Ref-Fuel

The State Energy Plan should be compatible with federal statute in relation to waste-to-energy as a sustainable, indigenous power source. Section 3.5 of the Draft Plan should expressly include waste-to-energy (WTE) as renewable. It should either be included as a subset of biomass or be included in the definition of renewable energy or both.

Response: A discussion of waste-to-energy has been added to the Electricity Assessment, Section 3.4 of the State Energy Plan. The State does not consider waste-to-energy renewable at this time.

### Integrated Waste Services Association (IWSA)

IWSA is also concerned because the Draft State Energy Plan states that no any new capacity additions will come on line in the State in the foreseeable future. But, in fact, within the last six months, a plant in Onondaga County has expanded its capacity over 50 percent, and more plants in the State are planning to do so. We feel it is very important for the State to include this indigenous, nondepletable energy source in any incentives that the State proposes.

Response: Waste management is an important industry that has yet to fully realize its potential. A recent NYSERDA study, entitled *Internal Working Survey of Landfill Gas-to-Energy Projects in New York State, 2001*, suggests that an additional 18 megawatts of landfill gas generation could be developed. The Energy Planning Board does not categorize waste-to-energy as a renewable energy resource, and while waste-to-energy plants are neither encouraged nor discouraged in the Energy Plan, siting such facilities is subject to applicable State and local laws. Waste-to-energy is included in the Electricity Assessment of the State Energy Plan as a potential resource for New York State.

### Independent Power Producers of New York, Inc. (IPPNY)

The State Energy Plan acknowledges that renewables are an important part of the generating mix in New York, but IPPNY believes the benefits of large scale renewable projects need to be emphasized. Waste-to-energy, biomass, wind, and hydropower projects should be encouraged throughout the state. In particular, waste-to-energy technology should not be overlooked.

Response: The technologies mentioned in the comment are the major ones that New York will likely rely on to help meet future energy needs. Mechanisms for

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developing large scale projects are currently being explored or in development. Moreover, the State has established an environmental disclosure program. Through the program, an environmental disclosure label will be attached periodically to utility bills and will show the environmental attributes of the power purchased by the consumer. This is expected to further spur private investment in large-scale renewable projects. As discussed in the previous response, the Planning Board does not categorize waste-to-energy as a renewable energy resource.

Through the system benefits charge program, NYSERDA is working to bring large wind power into the market. NYSERDA programs involve building the demand and the supply of green power by partnering with private companies interested in the renewables market.

### **New York Power Authority (NYPA) Renewables Projects**

#### **Better Queens Environment (BQE)**

With respect to New York Power Authority (NYPA) and renewables –

- The Draft State Energy Plan notes that NYPA is prohibited from selling energy for profit in New York State. BQE would like to know whether NYPA is permitted to sell energy for profit outside New York State.
- BQE recommends that NYPA contribute SBC funds to NYSERDA to promote energy efficiency and renewables and to assist low-income citizens. To exempt almost one-quarter of the State's generating capacity from fully supporting these programs, while creating redundant parallel programs, is an inefficient use of the State's resources.

Response: The New York Power Authority (NYPA) is a State-owned, non-regulated utility. It must act in accordance with applicable State and federal legislation. It is permitted to sell power outside New York under Federal Energy Regulatory Commission guidelines as supplies and pricing permit. The State Energy Plan recommends that NYPA increase its annual spending on energy efficiency by 25 percent and cooperate with NYSERDA and the Long Island Power Authority in offering and delivering programs. With respect to SBC contributions, NYPA is not regulated by the State Public Service Commission, the body that has authority over the SBC. NYPA has its own SBC-equivalent programs offered in collaboration and cooperation with NYSERDA.

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## **Funding for Renewable Technologies**

### **Better Queens Environment (BQE)**

With respect to funding for renewable technologies programs, of \$38 billion spent every year on energy in New York State, funding for renewables programs is \$11.6 million per year. This amounts to less than 0.3 percent. According to the Draft State Energy Plan, neighboring states allocate \$68-102 million for renewables. A comparison with European energy priorities is also enlightening. Individual states in Germany (Schleswig-Holstein) and Spain (Navarra) produce 19 and 22 percent, respectively, of their energy from wind alone.

**Response:** As indicated in Section 3.3 of the State Energy Plan, NYSERDA will spend \$77.5 million between 2001 and 2006 on renewable energy resources and technologies. This is in addition to funds spent on renewables by LIPA and NYPA. NYSERDA's renewable energy programs are designed to address development from multiple perspectives. Rather than directly funding projects, technical and market barriers are addressed. Among major impediments to full implementation of renewable energy resources are lack of demand for green power and lack of a green market infrastructure. For example, at an installed cost of \$10,000 per kilowatt, a direct investment of \$30 million would procure merely three megawatts of installed photovoltaic capacity. \$30 million will provide substantial assistance in expanding the renewable energy resources industry through leveraging private investment and training.

It should be noted that a high percentage of energy from wind generation might be possible in states and regions of the country that have low loads and unlimited land for installation of wind production. This is not the case in New York State.

### **Better Queens Environment (BQE)**

The **New York Energy Smart<sup>SM</sup>** programs, which are funded by the system benefits charge, fail to adequately promote renewables. It is our understanding that the **New York Energy Smart<sup>SM</sup>** programs offer loans and direct incentives to industry but only tax incentive based programs for private homeowners. Only 179 homes have participated in the first year of the program. BQE feels that loans and grants should be made available to qualifying low-income participants.

**Response:** NYSERDA is working to develop the infrastructure for manufacturing renewable technologies and supporting the renewable industry rather than simply providing rebates or one-time incentives. The State is supporting development of

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photovoltaic systems that are of high quality and that engender positive public response as opposed to systems that fail, leading to negative publicity. Section 3.3, Renewable Energy Assessment, contains information about State programs and contains a table showing the distribution of funding for various sectors. Incentives are provided for all sectors.

Diane A. Davis

New York State must give more incentives for owners and designers to use, such as cheaper construction loans, tax credits, etc. What about legislation requiring all new and retrofit residential and small commercial projects to incorporate solar collector panel technology?

Response: The **New York Energy Smart<sup>SM</sup>** Loan Fund Program, described in Section 3.3, Renewable Energy Assessment, of the State Energy Plan, provides interest reductions on loans for residential and commercial customers who install energy efficiency improvements and renewable energy systems. The Home Performance with ENERGY STAR® program also provides reduced interest on loans for energy efficiency improvements and renewable energy systems for one- and two-family homes.

Gaining support for legislation mandating solar collector panels might be problematic because the costs of such systems currently exceed conventional systems and would increase housing costs. This is an issue for the State Legislature to address.

Diane A. Davis

Tax credits should be instituted for non-polluting alternative energy sources

Environmental Defense

The State should expand its tax credit program to foster construction and retrofitting of the most energy efficient buildings with renewable generating capacity.

Response: While New York does not offer a tax credit for energy-efficient retrofits, a 25 percent tax credit is available for photovoltaic systems. Consumers can also use the **New York Energy Smart<sup>SM</sup>** Loan Fund to finance energy efficiency and renewable energy projects.

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## **Renewable Targets**

### **Great Lakes United**

Great Lakes United sees no statewide targets for renewables unless it is the 1.9 percent by the year 2020 which is laughable. The consensus goal of many groups working on this across the Great Lakes region is 20 percent renewables by 2020. This does not include hydropower, which, because of its many impacts on the fresh water ecosystem, must be treated separately.

### **Erin Cala**

In the Draft State Energy Plan there's a goal for New York State to have only one percent of its energy provided by renewable energy by 2020. This is unacceptable. This percent must be drastically increased. Governor Pataki's Executive Order 111 requires that State agencies purchase 20 percent of their power from renewable sources by 2010. The Draft State Energy Plan is in direct contradiction to this objective.

### **Lois M. Sturm**

This State Energy Plan pays lip service to renewable energy, but in fact only projects an increase in renewable energy's production from one percent to two percent by 2020. And ninety percent of that renewable energy is hydroelectric, which energy experts do not consider sustainable.

### **UPROSE**

The Draft State Energy Plan needs to commit to renewable power, such as wind and solar, which are clean and sustainable sources. Two percent of all power generated in New York coming from renewables is not adequate or acceptable.

**Response:** Expanding the supply of renewables requires an increase in demand for renewable energy. With the Governor's Executive Order 111, New York State is leading by example in creating market demand.

NYSERDA is working to bring green power marketers into New York and to build new renewable power supplies. Moving into a competitive retail power market will enable consumers to select the electric power mix that has the attributes they desire.

The State Energy Plan includes several recommendations that address this issue. The possibility of an investment tax credit for renewable electric generation capacity is also under consideration by the State.

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The State Energy Plan includes as an expected outcome a 50 percent increase in primary energy use from renewable energy resources by 2020.

### **Green Pricing**

#### **Alfred University**

Alfred University would like to see a statement supporting utility green pricing programs similar to the program that was recently announced by Niagara Mohawk and encouragement for other utilities to offer green power to their customers.

#### **Janet Allen**

We need to have the opportunity to purchase green energy. We need to provide tax and other incentives for consumers to choose clean, renewable energy and to conserve. Please make conservation and clean renewable energy the focus of New York State's Energy Plan.

#### **American Wind Energy Association (AWEA)**

NYPA should incorporate wind energy into its overall portfolio by seeking competitive bids for the purchase, through long-term contracts, of the output of large-scale wind turbines.

#### **R.G.S. Energy Group/Rochester Gas & Electric Corporation**

The State should encourage the development of renewable technologies that are reliable, sustainable, and price competitive with other energy products. Consistent with New York's goal of reducing energy costs, the State Energy Plan should not encourage the financing of these developments through market preferences, consumption supply quotas, or energy taxes and assessments.

**Response:** The State Energy Plan presents a balanced assessment of the resources available today and those that may be available in the future. The Energy Plan clearly supports development and deployment of clean renewable and demand reduction technologies that are cost effective, in the public interest, and sustainable without long-term subsidies.

The Energy Planning Board supports all programs that will make green power options available for customers. Programs such as those offered by Niagara Mohawk, coupled with the Public Service Commission's Environmental Disclosure program, and other proposals identified in the State Energy Plan, will encourage private-sector

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investment in renewable technologies. In particular, the Energy Plan establishes a renewables expectation for the State, recognizes the Governor's Executive Order 111 calling for purchases of renewable energy by State Government buildings, and calls for both the New York Power Authority and Long Island Power Authority to solicit renewable power from the competitive market.

### **Miscellaneous Recommendations**

#### **Ashok K. Trikha**

During the 1990s, wind became the world's fastest growing renewable energy source, expanding at an average annual rate ranging from 22.6 percent to 30 percent. The Draft State Energy Plan does not show a similar growth rate for renewable energy at the present time or in the future.

**Response:** An assessment of the technical, economic, and achievable potential of all renewables is provided in the *Efficiency and Renewable Energy Potential Assessment* referred to in Section 3.3 of the State Energy Plan.

#### **Koganeya, Toshiyuki**

A change should be made to "3. Increasing energy diversity in all sectors of the State's economy through greater use of energy efficiency technologies and alternative fuels" (page 1-12) should be changed to "3. Increasing energy diversity in all sectors of the State's economy through the greater use of energy efficiency technologies and alternative energy resources " The word "fuels" is inadequate when it involves solar and wind energy.

**Response:** The recommended change appears in the State Energy Plan

#### **Diane A. Davis**

There is no mention of the Stirling engine in the Draft State Energy Plan.

**Response:** Stirling engines are adaptable to using many types of energy inputs. All they require is a heat source that could be a solar collector or a burner fueled by low-quality digester gas. Stirling engines also have the highest theoretical efficiency of any engine yet devised. Implementation of the technology has been challenging because of cost and other factors, but various companies are active in continued development efforts. To date the best applications for Stirling technology have been in situations where the Stirling's "omnivorous" appetite for heat, combined with its high efficiency, have made it

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uniquely capable for a specific application. When Stirling engines have tried to compete head-to-head with conventional engines using conventional fuels, the Stirlings typically have lost because they tend to be larger, heavier and more expensive. NYSERDA has sponsored numerous projects that employ Stirling engines and continues to evaluate proposals that use this technology.

Babylon Greens, Town of Babylon

You have crunched a lot of numbers but there are no projections for possible wind energy, possible geothermal, for possible solar in here [the draft State Energy Plan].

Response: The potential contributions of wind, geothermal, and solar energy to New York State's energy mix are currently being evaluated as part of NYSERDA's *Efficiency and Renewable Energy Potential Assessment*. The impact of wind energy is addressed in the Electricity Assessment, Section 3.4 of the State Energy Plan.

General Support for Renewables

Susan Caumont

We are at the end of an era, the oil era, and at the beginning of a new era, the era of renewable energy. Now is the time to turn to build energy sustainability. There are technologies we can grow at home and export nationally and internationally. New York State can be a leader in renewable energy technologies. (See Response on page 11-26.)

Citizens Campaign for the Environment

New York State should offer the opportunity for members of the private sector to partner with the State in the purchase of renewable power, thereby increasing the cost advantages and market development potential. (See Response on page 11-26.)

Melanie Golden

It's clear a great amount of time and effort went into developing the State Energy Plan and I applaud many of its conclusions and recommendations. The State Energy Plan does not go far enough in outlining ways renewables can become part of our future. It does not go far enough in stating ways we can accomplish this. (See Response on page 11-26.)

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#### Citizens Campaign for the Environment

New York State should offer the opportunity for members of the private sector to partner with the State in the purchase of renewable power, thereby increasing the cost advantages and market development potential. (See Response on page 11-26.)

#### Great Lakes United

The State Energy Plan presents no collaborative strategies for changing regulations that currently do not favor renewables or for overcoming barriers including interconnection and higher costs of renewables.

New York State should commit to removing the blocks and providing the incentives that could even the playing field for renewable energy. Strategies could include support for low or no interest loans to finance new renewable energy based construction and manufacturing, tax incentives on renewable energy components requiring energy producers to use full-cost accounting including environmental and social externalities and revisiting the stranded asset and stranded debt calculations used to bail out the nuclear industry. (See Response on page 11-26.)

New York State should establish building code guidelines that will accommodate and provide for a renewable future such as passive solar. (See Response on page 11-26.)

#### EnergyPlus Cooperative of the Southern Tier and Finger Lakes

The State Energy Plan mentions the need for increasing the use of renewable energy sources, no clear targets are set and no mention is made of the need to develop the demand side of the renewable market. (See Response on page 11-26.)

The State Energy Plan should address the need for public resource support in creating the market for green energy. (See Response on page 11-26.)

#### Mary Griffin

Education about renewables is important and ENERGY STAR® Programs are crucial. (See Response on page 11-26.)

#### Irmgard Seidler

Develop renewable energy plants in New York. (See Response on page 11-26.)

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Wedlyne Guerrier

New York State should increase the funding for research in the field of renewable energy. With more research, the cost of renewable energy will decrease. (See Response on page 11-26.)

Ron Kamen

Move away from fossil fuel and nuclear power towards renewable energy sources. (See Response on page 11-26.)

Elizabeth Cunningham Smyth

I want research and development of alternative, sustainable, and non-polluting energy sources. (See Response on page 11-26.)

Leah Rosenberg

Why are we relying so heavily on fossil fuel in our energy plan when the ideas of solar power and wind power are in the air? Why are we not putting our resources and funding into researching these alternative power sources? (See Response on page 11-26.)

Ashok K. Trikha

New York should consider alternative sources of renewable energy and plan the same to avoid a situation of installing the natural gas fired generating plants. (See Response on page 11-26.)

Ann Link

The State should put its biggest efforts in solar and wind power since they are least harmful to the environment. (See Response on page 11-26.)

Chenango North Energy Awareness Group

We advocate phasing out fossil fuel use and retiring nuclear power. The State Energy Plan makes a lot of words endorsing energy conservation but it doesn't translate them into reality. Specifically we must promote photovoltaics, small-scale hydroelectric plants, tidal power, wind power, solar thermal systems, and fuel cells.

Response: At this point in time, non-hydropower renewable energy resources provide less than two percent of the electricity generated in New York State. The State Energy Plan supports aggressive promotion of renewable generation, primarily wind. With the advent of retail choice in electricity, however, customers will be able to buy a given resource, including renewables, if they desire. A major goal of the State Energy

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Plan is to ensure a reliable supply of power through use of diverse energy resources including fossil fuels and nuclear.

The State Energy Plan repeatedly calls for promotion of renewable energy resources.

Renewable energy as a percentage of primary energy use is expected to increase from ten percent in 2000 to 15 percent by 2020.

The State should competitively solicit 60 to 120 megawatts of renewable electricity generation to meet the requirement of the Governor's Executive Order No. 111 that up to ten percent of State facilities' electricity to be provided from renewable resources by 2005 and 20 percent by 2010.

The New York Power Authority (NYPA) and the Long Island Power Authority (LIPA) should competitively solicit bids for long-term contracts for the purchase of 100 megawatts each from renewable energy resources and that they each increase their annual investment on energy efficiency by 25 percent.

NYSERDA should examine the feasibility of a statewide renewable portfolio standard (RPS) for electricity generation, assess its economic impacts, determine how it would work in restructured, competitive electricity markets, and explore how it would contribute to the goals enunciated in the State Energy Plan.

Increased use of indigenous fuels and renewable-based electricity generation should be encouraged through appropriate regulatory reform initiatives, application of net-metering programs, continued reviews of interconnection requirements, consolidation and expansion of tax incentives, and development of the renewable fuels industry.

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